CLAIMS

1. Method for providing a shaped biodegradable elastomeric structure comprising forming homopolymers and/or copolymers of 1,3-trimethylene carbonate (TMC) into a desired shape and irradiating said desired shape with actinic radiation in an inert atmosphere for crosslinking.

2. Method according to claim 1, wherein the homopolymer and/or copolymer of 1,3-trimethylene carbonate (TMC) is/are characterized by a number average molecular weight ($\bar{M}_n$) greater than 10,000, preferably between 10,000 to 300,000, and more preferably between 50,000 to 200,000.

3. Method according to claim 1 or claim 2, wherein the copolymer of 1,3-trimethylene carbonate (TMC) is chosen from the group consisting of 1,3-trimethylene carbonate (TMC) (co)polymers with lactones (cyclic esters), cyclic carbonates, cyclic ethers, cyclic anhydrides, and cyclic depsipeptides (morpholine 2,5-dione derivatives).

4. Method according to any of the claims 1-3, wherein the copolymer of 1,3-trimethylene carbonate (TMC) is chosen from the group consisting of a statistical copolymer, a random copolymer, an alternating copolymer, a block polymer, a diblock copolymer, a triblock copolymer, a multiblock copolymer, a star-shaped block copolymer, and a graft block copolymer.

5. Method according to any of the claims 1-4, wherein the copolymer of 1,3-trimethylene carbonate (TMC) is chosen from the group consisting of 1,3-trimethylene carbonate (TMC)

(co)polymers with polyethylene oxide (PEO), polyethylene glycol (PEG) and ϵ-caprolactone (CL).

6. Method according to any of the claims 1-5, wherein the copolymer of 1,3-trimethylene carbonate (TMC) is chosen from the group consisting of 1,3-trimethylene carbonate (TMC) (co)polymers with δ-valerolacton, 1,5-dioxepane-2-one, and ϵ-caprolactone.

7. Method according to any of the claims 1-6, wherein the copolymer of 1,3-trimethylene carbonate (TMC) is poly(1,3,-trimethylene carbonate-co-ϵ-caprolactone) (poly(TMC-CL)).

8. Method according to any of the claims 1-7, wherein the actinic radiation is chosen from the group consisting of gamma radiation, high-energy UV radiation and electron radiation, preferably gamma radiation.

9. Method according to any of the claims 1-8, wherein the actinic radiation is gamma radiation and the irradiation dosage is 5-100 kGy, preferably 10-45 kGy.

10. Method according to any of the claims 1-9, wherein the inert atmosphere is obtained by means of a reduced pressure of less than 10^4 Pa.

11. Method according to any of the claims 1-10, wherein the inert atmosphere is obtained by means of an inert gas, preferably nitrogen.

12. Method according to any of the claims 1-11, characterized by a creep rate of the provided shaped

biodegradable elastomeric structure of less than 10% of the yield stress.

13. Method according to any of the claims 1-12, characterized by a degree of swelling of the provided shaped biodegradable elastomeric structure of less than 400% in chloroform.

14. Method according to any of the claims 1-13, characterized by a gel fraction of the provided shaped biodegradable elastomeric structure of more than 10% by weight.

15. Method according to any of the claims 1-14, comprising sterilization of the provided shaped biodegradable elastomeric structure, preferably in an autoclave.

16. Shaped biodegradable elastomeric structure obtainable by a method according to any of the claims 1-15.

17. Use of a shaped biodegradable elastomeric structure according to claim 16 in or as an implant and/or a matrix and/or a support device.

18. Medical implant and/or matrix and/or support device comprising a shaped biodegradable elastomeric structure according to claim 16.